# Waste Stream

## Name

Wastes consisting of, containing or contaminated with mercury.

## Waste description

Wastes consisting of, containing or contaminated with mercury comprise the following: wastes consisting of elemental mercury (e.g., elemental mercury recovered from mercury-containing waste and surplus stock of elemental mercury designated as waste); wastes containing mercury (e.g., waste of mercury-added products, such as waste mercury thermometers, fluorescent lamps, batteries); stabilized or solidified wastes containing mercury that result from the stabilization or solidification of wastes consisting of elemental mercury; wastes contaminated with mercury (e.g., residues generated from mining processes, industrial processes, or waste treatment processes).

## Information on waste / non-waste classification

National provisions concerning the definition of waste may differ and, therefore, the same material may be regarded as waste in one country but as non-waste in another country. Determining whether a substance or object is or not a waste may not always be straightforward; however, it is ultimately the mandate of the national competent authority on waste to decide when an item is to be defined as waste or non-waste. Further work on clarifying this matter under the Basel Convention is in progress ([[1]](#endnote-2)).

A production residue resulting from a process (the primary aim of which is not the production of that substance) may be regarded as not being waste but as being a by-product if it meets criteria laid down in national legislation, for example, gypsum wallboard produced from solid residues from flue gas cleaning on coal fired power plants (with trace concentrations of mercury); sulphuric acid produced from desulphurization of flue gas (flue gas cleaning) in non-ferrous metal plants (with trace concentrations of mercury); chlorine and sodium hydroxide produced with mercury-based chlor-alkali technology (with trace concentrations mercury); and metal mercury or mercury (I) chloride (commonly known as calomel) as by-product from non-ferrous metal mining (high mercury concentrations) ([[2]](#endnote-3)).

## Classification under the Basel Convention (Annexes I, II, III, VIII and/or IX)

Wastes consisting of, containing or contaminated with mercury belong to category Y29­— Wastes having as constituents mercury or mercury compounds —in Annex I, and may be further classified as A1030 in Annex VIII—wastes having as constituents or contaminants mercury or mercury compounds. Metal wastes and waste consisting of alloys of mercury can also be classified as A1010. Similarly, waste electrical and electronic assemblies or scrap containing components such as mercury-switches and mercury-containing batteries, or contaminated with mercury or mercury compounds can also be classified as A1180. Other wastes listed in Annex VIII which may contain or be contaminated with mercury include A1170, A2030, A2060, A3170, A4010, A4020, A4030, A4080 and A4160 ([[3]](#endnote-4)).

Wastes consisting of, containing or contaminated with mercury are likely to possess hazard characteristics H6.1, H11, H12 and H13 in Annex III.

## Basel Convention guidelines and other guidelines/instruments

* SBC Technical Guidelines for the Environmentally Sound Management of Wastes Consisting of Elemental Mercury and Wastes Containing or Contaminated with Mercury (2011) – Available at http://www.basel.int/Implementation/TechnicalMatters/DevelopmentofTechnicalGuidelines/AdoptedTechnicalGuidelines/tabid/2376/Default.aspx. This guideline is currently being updated ([[4]](#endnote-5)).
* UNDP/GEF Guidance on the Cleanup, Temporary or Intermediate Storage, and Transport Of Mercury Waste From Healthcare Facilities (2010) – Available at http://www.gefmedwaste.org/section.php?id=79
* SBC Technical Guidelines on the Environmentally Sound Recycling/Reclamation of Metals and Metal Compounds (R4) (2004) – Available at http://www.basel.int/Implementation/TechnicalMatters/DevelopmentofTechnicalGuidelines/AdoptedTechnicalGuidelines/tabid/2376/Default.aspx
* European IPPC Bureau Reference Document on Best Available Techniques for the Waste Treatments Industries (2006) – Available at http://eippcb.jrc.ec.europa.eu/reference/ (currently under review)
* BiPRO GmbH Requirements for Facilities and Acceptance Criteria for the Disposal of Metallic Mercury (2010) – Available at http://ec.europa.eu/environment/chemicals/mercury/studies\_en.htm
* Euro Chlor Guidelines for the Preparation for Permanent Storage of Metallic Mercury Above Ground or in Underground Mines (2007) – Available at http://www.unep.org/chemicalsandwaste/Mercury/PrioritiesforAction/ChloralkaliSector/Reports/tabid/4495/language/en-US/Default.aspx
* United States Department of Energy (DOE) Interim Guidance on Packaging, Transportation, Receipt, Management, and Long-Term Storage of Elemental Mercury (2009) – Available at http://energy.gov/em/services/waste-management/waste-and-materials-disposition-information/long-term-management-and

# Waste Management

## General handling

Appropriate personal protective equipment (PPE) should be worn, and Materials Safety Data Sheet (MSDS) should be readily available for workers to seek additional information about potential hazards and the appropriate corrective action in the event of an accident.

Those who handle wastes consisting of elemental mercury should pay particular attention to the prevention of evaporation and spillage of elemental mercury into the environment. Such waste should be placed in a gas- and liquid-tight container that bears a distinctive mark indicating that it contains “toxic” elemental mercury.

Those who handle wastes contaminated with mercury should not mix them with other wastes. Such waste should be placed in a container to prevent its release into the environment.

## Collection

* Waste collection stations or drop-off depots: Waste containing mercury may be discarded in specially designed containers made available for public use at existing waste collection stations or depots. Coloured, marked waste containers should be used exclusively for waste containing mercury such as fluorescent lamps and mercury-containing thermometers and batteries. Designated containers should all be the same colour and/or bear the same logo to facilitate public education and increased participation. Breakage of fluorescent lamps and thermometers should be avoided, inter alia, through appropriate box design and by providing written information on collection procedures. Waste containing mercury should be collected exclusively by collectors authorised by local governments or appropriate authorities. ([[5]](#endnote-6))
* Collection at public places or shops: Waste containing mercury, particularly used fluorescent lamps, thermostats, mercury batteries and thermometers may be collected via specially designed collection vehicles or at public places or shops (e.g. town halls, libraries, electronics stores and other retail outlets), provided that appropriate collection containers are available. Separate collection boxes or containers for these wastes should be designed to accommodate their characteristics and to minimize breakage. Consumers should be able to take used fluorescent lamps, mercury batteries, thermostats, and mercury thermometers to those places free of charge. ([[6]](#endnote-7))
* Take-back collection programme: Take-back programmes are often voluntary initiatives delivered by the private sector which provide the opportunity to consumers to return used products at the point of purchase or some other specified facility. Take-back collection programmes generally focus on consumer products that are widely used, such as batteries, switches, thermostats, fluorescent lamps and other mercury-added products. ([[7]](#endnote-8))

## Storage

Two types of storage are generally considered:

(1) Storage of wastes by generators pending collection: Wastes should be stored safely and kept apart from other wastes. Waste should be stored by generators for a limited time, as allowed by national standards, and in any case sent off-site for appropriate disposal as soon as is practical. The storage area should: (a) have a roof and walls that protect from the weather, insects, and other animals; (b) have a floor made of a material that is smooth and impervious to mercury; (c) be locked to prevent theft; (d) have ventilation that can eject air from the space directly to the outside and ventilation controls that can stop air circulation from the storage space to the inside of the facility; (e) have bunding or barriers on the floor or a spill containment tray directly below the waste containers to prevent spills from spreading (the containment volume inside the bund wall or the containment volume of the tray should be at least 125% of the total volume of liquid mercury stored); (f) be kept cool and dry (ideally below 25°C to minimize volatilization and below 40% relative humidity to minimize corrosion if steel containers and shelves are used). ([[8]](#endnote-9))

When elemental mercury is stored for the purpose of accumulation, a vapour suppression agent or water should be added to the primary container to protect workers when adding more mercury. Workers should use PPE including respiratory protection.

(2) Storage of wastes pending disposal operations: Storage in a centralized facility for an intermediate period until such time as long-term storage (terminal storage), treatment or disposal facilities become available in the country. Storage facilities should be kept locked to avoid theft or unauthorized access. Access to wastes consisting of elemental mercury and wastes containing or contaminated with mercury should be restricted to those with adequate training for the purpose including in recognition, mercury-specific hazards and handling. It is recommended that storage buildings for all types of wastes consisting of elemental mercury and wastes containing or contaminated with mercury should not be used to store other liquid wastes and materials. A full inventory of the wastes kept in the storage site should be created and updated as waste is added or disposed of. Regular inspection of storage areas should be undertaken, focusing particularly on damage, spills and deterioration. ([[9]](#endnote-10))

Guidance developed by the UNDP/GEF Global Healthcare Waste Project for mercury wastes generated by healthcare facilities provides detailed advice regarding the storage of wastes which is applicable to facilities that generate waste mercury devices and other wastes contaminated with mercury. ([[10]](#endnote-11))

## Packaging and labelling

In preparation for transport, mercury waste should be placed in a transport container that is closed, structurally sound, compatible with the contents, and designed to prevent release of mercury. If the original transport case or box in which devices were shipped is still in good condition, it can be used for shipment of unbroken devices. The mercury waste should be packed carefully with packing material to prevent breakage inside the container. The transport container should be tightly sealed to prevent escape of mercury if breakage occurs. It is recommended that fluorescent lamps be placed in a well-sealed vapour-resistant liner (such as a plastic-foil liner) inside an inner box which in turn is placed in an outer box that is structurally sound and adequate to prevent breakage. ([[11]](#endnote-12))

Mercury compounds are generally categorized under Class 6.1 (toxic substances) and assigned to UN 2024—waste mercury compound, liquid, N.O.S.—or UN 2025—waste mercury compound, solid, N.O.S. Elemental mercury (UN2809) is classified under Class 8 (corrosive substances). Mercury wastes that do not meet any other definition of dangerous goods (for example, wastes harmful to the marine environment only), may be be shipped under the description “waste environmentally hazardous substance, liquid, N.O.S.” (Class 9, UN 3082) or “waste environmentally hazardous substance, solid, N.O.S.” Class 9, UN 3077), as appropriate.

## Transportation

Transport of wastes should be in conformity with national legislation on the transport of dangerous goods; where there are no such regulations, responsible authorities should refer to the latest revised edition of the United Nations Recommendations on the Transport of Dangerous Goods, Model Regulations ([[12]](#endnote-13)).

Only qualified, authorized and licensed transport companies should be used. The regulatory authority may specify the maximum amounts above which a registered transporter is required.

Transport vehicles should be properly marked with placards identifying the fact that hazardous products are being transported. PPE should be provided for the transport personnel, who should be trained in its emergency use. Transport vehicles should be outfitted with the equipment necessary to neutralize any simple spillage or leakage problems, and the transport personnel trained on how to use it. All releases should be immediately contained.

Containers should not be stacked more than 1.5 meters high to avoid crushing items.

Hazardous waste manifests or consignment notes must accompany each shipment of hazardous waste in accordance with national laws, until it reaches its final destination. On completion of a shipment, the receiving facility should return a signed copy of the manifest to the generator, confirming that the waste has been received by the designated facility. If the waste regulatory authority is sufficiently well established, it may be possible to pre-notify the agency about a planned offsite transport and disposal of hazardous waste and to obtain the agency’s approval.

Emergency response information—Emergency Response Intervention Cards (ERICards) ([[13]](#endnote-14)), Emergency Response Guides ([[14]](#endnote-15))—should accompany shipments of hazardous waste to provide guidance on initial actions in response to a transport accident.

# Disposal Operations (Annex IV, Sections A and B)

## Best available techniques (BAT) and best environmental practices (BEP)

Facilities that handle wastes consisting of, containing or contaminated with mercury or mercury compounds should meet all basic requirements to ensure an environmentally sound management (ESM) of wastes and commit to continual improvement in their operations. A facility should have the following, which should meet the approval of the relevant authorities: (a) appropriate design and location; (b) an environmental and social impact assessment, where appropriate; (c) sufficient measures in place to safeguard occupational safety and health, including an appropriate and adequate training programme for its personnel; (d) sufficient measures in place to protect the environment; (e) an applicable EMS in place, if feasible and appropriate; (f) an adequate and transparent monitoring, recording, reporting and evaluation programme; (g) an adequate emergency plan and response mechanism; (h) an adequate plan for closure and aftercare. ([[15]](#endnote-16))

Mercury recovery from solid waste generally comprises four processes: (1) pre-treatment, (2) thermal treatment, (3) thermal desorption and (4) purification. In order to minimize mercury emissions from the mercury recovery process, a facility should employ a closed-system. The entire process should take place under reduced pressure in order to prevent leakage of mercury vapour into the processing area. ([[16]](#endnote-17))

Information on the environmentally sound disposal of wastes consisting of, containing or contaminated with mercury or mercury compounds is provided by the Secretariat of the Basel Convention. ([[17]](#endnote-18))

# Sustainable Materials Management (SMM)

## Extended Producer Responsibility (EPR)

* European Union: Fluorescent lamps are one of the products subject to the requirements of the Directive 2012/19/EU, which requires producer responsibility for end-of-life management of electrical and electronic equipment that contain, inter alia, mercury.
* California, United States: The California Mercury Thermostat Collection Act (AB 2347) requires thermostat manufacturers to establish and maintain a take-back program for mercury-added thermostats ([[18]](#endnote-19)).
* Canada: Switch Out is a national programme designed to remove, collect and manage mercury-containing convenience lighting switches and anti-lock braking system (ABS) sensor modules from end-of-life vehicles (ELVs) ([[19]](#endnote-20)). The programme is funded and supported by the Canadian Steel Producers Association (CSPA) and the Canadian Vehicle Manufacturers' Association (CVMA); it currently works in partnership with the Automotive Recyclers of Canada (ARC) and the Canadian Association of Recycling Industries (CARI).
* Ontario, Canada: The Take Back the Light programme works with sellers and buyers of fluorescent lamps to recover and recycle fluorescent lamps, generated from the industrial, commercial and institutional sector ([[20]](#endnote-21)). The programme, developed with financial support from the Ontario Ministry of Environment, is administered by the Recycling Council of Ontario (RCO) and operates on a voluntary basis. Distributors that participate in the programme pay an annual fee based on gross sales, which cover part of the cost of the programme.
* Canada: The Switch the 'Stat programme administered by the Heating, Refrigeration and Air Conditioning Institute of Canada (HRAI) with the support of the Canadian Institute of Plumbing and Heating (CIPH), works with heating and cooling contractors and wholesalers to collect and recycle older mercury-containing and electronic thermostats, on behalf of industry ([[21]](#endnote-22)). The programme is funded by manufacturers and distributors of mercury-containing thermostats.

## Green or Environmentally preferable purchasing (EPP)

* EPP refers to the purchase of the least damaging products and services, in terms of environmental impact. EPP includes the purchase of products that have a lesser or reduced effect on human health and the environment when compared with competing products that serve the same purpose ([[22]](#endnote-23)). In the United States, the Northeast Waste Management Officials' Association (NEWMOA) has established the Interstate Mercury Education and Reduction Clearinghouse (IMERC) to support legislative mercury reduction efforts and to provide a central information source about products that contain mercury; IMERC maintains a Mercury-Added Products Database of national sales data submitted by manufacturers and distributors on mercury-added products sold in the 14 states that require such reporting ([[23]](#endnote-24)).

## Incentives and disincentives

* European Union: Directive 2006/66/EC prohibits the placing on the market of certain batteries containing mercury and promotes a high rate of collection and recycling of waste batteries and improvement in the environmental performance of all involved in the life-cycle of batteries and accumulators, including their recycling and disposal. Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment, restricts the use of mercury, among others, in electrical and electronic equipment. The European chlor-alkali industry committed voluntarily to close or convert its mercury based plants by 2020.
* United States: Waste having a total mercury content greater than or equal to 260 mg/kg is subject to mercury recovery based on the Land Disposal Restrictions (40 CFR 268.40).

# Legislation

## Existing national, regional and international legislations

* Minamata Convention on Mercury: The objective of the Minamata Convention on Mercury is to protect the human health and the environment from anthropogenic emissions and releases of mercury and mercury compounds. The Convention covers various areas to achieve its objective, including: (a) to reduce the supply of mercury and control the international trade in mercury; (b) to reduce the demand for mercury in products, manufacturing processes, and artisanal and small-scale gold mining; (c) to reduce emissions and releases of mercury to air, land, and water; (d) to ensure environmentally sound interim storage of mercury; (e) to address mercury wastes and remediation of contaminated sites; and (f) to specify arrangements for capacity-building, technical assistance, and technology transfer. The Minamata Convention, once in force, will require Parties to, among other provisions, phase-out or take measures to reduce mercury use in certain products such as batteries, switches, lights, cosmetics, pesticides and measuring devices, and create initiatives to reduce the use of mercury in dental amalgam. The Convention also includes a ban on new mercury mines, the phase-out of existing ones, control measures on air emissions, the international regulation of the informal sector for artisanal and small-scale gold mining, and the obligation to dispose excess mercury from the decommissioning of chlor-alkali facilities using operations that do not lead to recovery, recycling, reclamation, direct re-use or alternative uses. ([[24]](#endnote-25))
* European Union: Council Directive 2011/97/EU of 5 December 2011 amending Directive 1999/31/EC as regards specific criteria for the storage of metallic mercury considered as waste; available at http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32011L0097. Regulation (EC) No 1102/2008 of the European Parliament and of the Council, of 22 October 2008, on the banning of exports of metallic mercury and certain mercury compounds and mixtures and the safe storage of metallic mercury; available at http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32008R1102. Directive 2006/66/EC of the European Parliament and of the Council of 6 September 2006 on batteries and accumulators and waste batteries and accumulators and repealing Directive 91/157/EEC; available at http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32006L0066. Regulation (EC) No.1907/2006 of the European Parliament and of the Council, of 18 December 2006, concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC; available at http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32006R1907. Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE); available at http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32012L0019
* United States: The Mercury Export Ban Act of 2008 (MEBA) prohibits the export of elemental mercury from the United States beginning in 2013 (MEBA does not ban the export of mercury compounds). Also, the Federal government is required to provide long-term management and storage of any elemental mercury generated within the United States. Available at http://www.epa.gov/mercury/regs.htm
* Canada: Notice requiring the preparation and implementation of pollution prevention plans in respect of mercury releases from mercury switches in end-of-life vehicles processed by steel mills. Available at http://www.ec.gc.ca/planp2-p2plan/default.asp?lang=En&n=E8AFAE92-1

# Capacity and Feasibility

Indicative costs of mercury storage, treatment, disposal, and selected release reductions measures are provided in the following reports prepared for the Environment Directorate-General of the European Commission (DG Environment): “Cost Effectiveness of Options for a Global Legally Binding Instrument on Mercury" and “Mercury Flows and Safe Storage of Surplus Mercury”, available at http://ec.europa.eu/environment/chemicals/mercury/index\_en.htm.

Existing technologies for the stabilization/solidification of elemental mercury and mercury-containing wastes are identified in a report prepared for the German Federal Ministry for the Environment ([[25]](#endnote-26)). The reports "Options Analysis and Feasibility Study for the Long Term Storage of Mercury in the Latin America and Caribbean" and “Analysis of Options for the Environmentally Sound Management of Surplus Mercury in Asia and the Pacific” provide information on various options which countries may wish to consider in the environmentally sound storage of excess mercury in the respective regions ([[26]](#endnote-27)) ([[27]](#endnote-28)).

Information on disposal and recovery facilities authorized, permitted or registered to operate in the territories of the Parties to the Basel Convention, is provided in the Online Reporting Database of the Basel Convention, which contains data transmitted by Parties pursuant to Article 13 (3) of the Convention. The database is accessible through the Basel Convention website on: http://www.basel.int/Countries/NationalReporting/ReportingDatabase/tabid/1494/Default.aspx.

As far as is known, there are currently only two processes available for the stabilization of metallic mercury that are either already in use on an industrial scale (DELA GmbH Recycling Solutions, http://www.dela-recycling.com/) or are prepared for industrial use (MAYASA, <http://mersade.eu/>) ([[28]](#endnote-29)). Available underground disposal facilities include the following: Untertage-Deponie Herfa-Neurode and Untertage-Deponie Zielitz, Germany, both operated by K+S Entsorgung ([[29]](#endnote-30)); Thüringen Glückauf Sondershausen Entwicklungs- und Sicherungsgesellschaft mbH (GSES), Germany ([[30]](#endnote-31)); Untertagedeponie Heilbronn, Germany, operated by UEV Umwelt, Entsorgung und Verwertung GmbH ([[31]](#endnote-32)); Minosus, United Kingdom, operated by Veolia Environmental Services ([[32]](#endnote-33)); and NOAH Langøya in Norway ([[33]](#endnote-34)). Batrec Industrie AG (Switzerland) specializes in mercury recycling ([[34]](#endnote-35)); Augean PLC (United Kingdom) offers treatment for mercury bearing naturally occurring radioactive material (NORM) wastes ([[35]](#endnote-36)).

# Permitting

Waste facilities should be licensed/authorised/permitted. Waste exporters should be licensed and achieve high standards of environmental protection in any storage facility, and should also present a detailed set of operating procedures describing its activities and those of its partners in other countries in order to facilitate governmental actions in the regional scenario.

# Enforcement

The ESM of wastes requires a regulatory and enforcement infrastructure that ensures compliance with legal instruments and standards. Consideration should be given to a national (and sometimes a regional) policy that includes provisions to allow prompt, adequate and effective enforcement actions to be undertaken, including sanctions and penalties that will serve as a deterrent to non-compliance.

Measures should be in place to ensure adequate monitoring, inspection and enforcement of waste imports and exports subject to the requirements of the Basel Convention, by agents of the State and cooperation with enforcement agencies in other States (to prevent illegal traffic). Adequate penalties and sanctions for illegal traffic should discourage such movements in the future.

# Certification and Auditing Systems

It is recommended that licensed waste management facilities should be subject to annual inspections by the appropriate government agencies and/or audits by a recognised independent auditor. The objective of the inspection and/or auditing procedure would be to: check conformance of the facility with all basic requirements to ensure the ESM of wastes, with relevant environmental regulations, and, if applicable, current EMS systems. Verifying compliance with existing laws and regulations is embodied in the European Community Eco-Management and Audit Scheme (EMAS). Under ISO 14001, a facility is required to know whether or not it is in compliance with applicable laws and regulations; without that knowledge, the facility would be considered out of conformance with that ISO standard. The inspection and/or audit should also assess the performance of the facility with respect to environment, health and safety objectives. ([[36]](#endnote-37))

In Germany, facilities may be certified as “Entsorgungsfachbetrieb” (specialised waste management companies) according to the requirements set out in the Ordinance on Specialised Waste Management Companies (EfbV). ([[37]](#endnote-38))

# Transboundary Movements

Governments should put in place legal requirements to implement and enforce the provisions of relevant international and/or regional instruments in relation to the transboundary movement of wastes (pre-notification, prior informed consent, etc.), including the Basel Convention.

Transboundary movements of wastes should be kept to a minimum consistent with their ESM and should be conducted in a manner that protects human health and the environment from any adverse effects that may result from such movements.

Transboundary movements of wastes for management in another country cannot be assured to result in ESM by evaluating receiving facilities alone. Elements such as those for effective legal systems, government oversight and other infrastructure to protect the occupational health and safety of workers, communities and the environment, should also be considered. Transboundary movements of wastes should not be considered to be legal where there is a reason to believe the waste in question will not be managed according to ESM ([[38]](#endnote-39)).

Notifications received by the Secretariat of the Basel Convention from Parties—pursuant to Article 13 of the Convention—on decisions to prohibit or restrict the import/export of hazardous or other wastes are published on the website of the Secretariat ([[39]](#endnote-40)).

1. For further information, refer to the development of “Technical Guidelines on Transboundary Movements of E-waste and Used Electrical and Electronic Equipment, in Particular Regarding the Distinction Between Waste and Non-waste Under the Basel Convention” (http://www.basel.int/Implementation/TechnicalMatters/DevelopmentofTechnicalGuidelines/Ewaste/tabid/2377/Default.aspx), the development of Guidance to Provide Further Legal Clarity in Relation to “Used and End-of-life Goods” (http://www.basel.int/Implementation/LegalMatters/CountryLedInitiative/OutcomeofCOP10/Providingfurtherlegalclarity/tabid/2673/Default.aspx) , and the development of a Glossary of Terms to provide additional legal clarity with respect to certain terms used in the Convention (http://www.basel.int/Implementation/LegalMatters/LegalClarity/tabid/3621/Default.aspx).. [↑](#endnote-ref-2)
2. United Nations Environment Programme (UNEP). 2013. Toolkit for Identification and Quantification of Mercury Releases: Reference Report and Guideline for Inventory Level 2. Version 1.2. April 2013. UNEP Chemicals Branch, Geneva, Switzerland. Available at http://www.unep.org/chemicalsandwaste/Mercury/MercuryPublications/GuidanceTrainingMaterialToolkits/MercuryToolkit/tabid/4566/language/en-US/Default.aspx [↑](#endnote-ref-3)
3. Secretariat of the Basel Convention. 2012. Technical Guidelines for the Environmentally Sound Management of Wastes Consisting of Elemental Mercury and Wastes Containing or Contaminated with Mercury. Available at http://www.basel.int/Implementation/TechnicalMatters/DevelopmentofTechnicalGuidelines/AdoptedTechnicalGuidelines/tabid/2376/Default.aspx [↑](#endnote-ref-4)
4. For further information, refer to http://www.basel.int/Implementation/MercuryWastes/TechnicalGuidelines/tabid/2380/Default.aspx [↑](#endnote-ref-5)
5. Secretariat of the Basel Convention. 2012. Technical Guidelines for the Environmentally Sound Management of Wastes Consisting of Elemental Mercury and Wastes Containing or Contaminated with Mercury. Available at http://www.basel.int/Implementation/TechnicalMatters/DevelopmentofTechnicalGuidelines/AdoptedTechnicalGuidelines/tabid/2376/Default.aspx [↑](#endnote-ref-6)
6. Secretariat of the Basel Convention. 2012. Technical Guidelines for the Environmentally Sound Management of Wastes Consisting of Elemental Mercury and Wastes Containing or Contaminated with Mercury. Available at http://www.basel.int/Implementation/TechnicalMatters/DevelopmentofTechnicalGuidelines/AdoptedTechnicalGuidelines/tabid/2376/Default.aspx [↑](#endnote-ref-7)
7. Secretariat of the Basel Convention. 2012. Technical Guidelines for the Environmentally Sound Management of Wastes Consisting of Elemental Mercury and Wastes Containing or Contaminated with Mercury. Available at http://www.basel.int/Implementation/TechnicalMatters/DevelopmentofTechnicalGuidelines/AdoptedTechnicalGuidelines/tabid/2376/Default.aspx [↑](#endnote-ref-8)
8. UNDP/GEF Global Healthcare Waste Project. 2010. Guidance on the Cleanup, Temporary or Intermediate Storage, and Transport of Mercury Waste From Healthcare Facilities. Available at http://www.gefmedwaste.org/section.php?id=79 [↑](#endnote-ref-9)
9. Secretariat of the Basel Convention. 2012. Technical Guidelines for the Environmentally Sound Management of Wastes Consisting of Elemental Mercury and Wastes Containing or Contaminated with Mercury. Available at http://www.basel.int/Implementation/TechnicalMatters/DevelopmentofTechnicalGuidelines/AdoptedTechnicalGuidelines/tabid/2376/Default.aspx [↑](#endnote-ref-10)
10. UNDP/GEF Global Healthcare Waste Project. 2010. Guidance on the Cleanup, Temporary or Intermediate Storage, and Transport of Mercury Waste From Healthcare Facilities. Available at http://www.gefmedwaste.org/section.php?id=79 [↑](#endnote-ref-11)
11. UNDP/GEF Global Healthcare Waste Project. 2010. Guidance on the Cleanup, Temporary or Intermediate Storage, and Transport of Mercury Waste From Healthcare Facilities. Available at http://www.gefmedwaste.org/section.php?id=79 [↑](#endnote-ref-12)
12. For further information, refer to http://www.unece.org/trans/danger/danger.html [↑](#endnote-ref-13)
13. For further information, refer to http://www.ericards.net/ [↑](#endnote-ref-14)
14. For further information, refer to http://www.tc.gc.ca/eng/canutec/guide-menu-227.htm or http://phmsa.dot.gov/hazmat/library [↑](#endnote-ref-15)
15. Secretariat of the Basel Convention. 2013. Framework for the Environmentally Sound Management of Hazardous Wastes and Other Wastes. Available at http://www.basel.int/Implementation/CountryLedInitiative/EnvironmentallySoundManagement/ESMFramework/tabid/3616/Default.aspx [↑](#endnote-ref-16)
16. Secretariat of the Basel Convention. 2012. Technical Guidelines for the Environmentally Sound Management of Wastes Consisting of Elemental Mercury and Wastes Containing or Contaminated with Mercury. Available at http://www.basel.int/Implementation/TechnicalMatters/DevelopmentofTechnicalGuidelines/AdoptedTechnicalGuidelines/tabid/2376/Default.aspx [↑](#endnote-ref-17)
17. Secretariat of the Basel Convention. 2012. Technical Guidelines for the Environmentally Sound Management of Wastes Consisting of Elemental Mercury and Wastes Containing or Contaminated with Mercury. Available at http://www.basel.int/Implementation/TechnicalMatters/DevelopmentofTechnicalGuidelines/AdoptedTechnicalGuidelines/tabid/2376/Default.aspx [↑](#endnote-ref-18)
18. For further information, refer to http://www.thermostat-recycle.org/ [↑](#endnote-ref-19)
19. For further information, refer to http://www.switchout.ca/ [↑](#endnote-ref-20)
20. For further information, refer to http://www.takebackthelight.ca/ [↑](#endnote-ref-21)
21. For further information, refer to http://www.switchthestat.ca/eng/index.php [↑](#endnote-ref-22)
22. (United States) Executive Order 13101 of September 14, 1998. Greening the Government through Waste Prevention, Recycling, and Federal Acquisition. Federal Register Vol. 63, No. 179. Available at http://www.epa.gov/epp/pubs/13101.pdf [↑](#endnote-ref-23)
23. For further information, refer to http://www.newmoa.org/prevention/mercury/imerc/Notification/about.cfm [↑](#endnote-ref-24)
24. For further information, refer to http://www.mercuryconvention.org/ [↑](#endnote-ref-25)
25. Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) mbH. 2009. Technologies for the stabilization of elemental mercury and mercury-containing wastes. Final report. Available at http://www.unep.org/chemicalsandwaste/Portals/9/Mercury/Documents/PartneshipsAreas/grs\_252\_stabmerc.pdf [↑](#endnote-ref-26)
26. Laboratorio Tecnológico del Uruguay (LATU)/ United Nations Environment Programme (UNEP) Chemicals Branch. 2010. Options Analysis and Feasibility Study for the Long Term Storage of Mercury in the Latin America and Caribbean. Available at http://www.unep.org/chemicalsandwaste/Mercury/PrioritiesforAction/SupplyandStorage/Activities/LACMercuryStorageProject/tabid/3554/language/en-US/Default.aspx [↑](#endnote-ref-27)
27. Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) mbH. 2011. Analysis of options for the environmentally sound management of surplus mercury in Asia and the Pacific. Final Report. Available at http://www.unep.org/chemicalsandwaste/Portals/9/Mercury/Documents/supplystorage/Analysis%20of%20options%20for%20the%20environmentally%20sound%20management%20of%20surplus%20Hg%20in%20AP%20R2.pdf [↑](#endnote-ref-28)
28. (Germany) Federal Environment Agency. 2014. Behaviour of mercury and mercury compounds at the underground disposal in salt formations and their potential mobilisation by saline solutions. Available at http://www.umweltbundesamt.de/sites/default/files/medien/378/publikationen/texte\_07\_2014\_behaviour\_of\_mercury\_and\_mercury\_compounds\_at\_the\_underground\_disposal\_in\_salt\_formations.pdf [↑](#endnote-ref-29)
29. For further information, refer to <http://www.ks-entsorgung.com/> [↑](#endnote-ref-30)
30. For further information, refer to <http://gses.de.server1178-han.de-nserver.de/index.php> [↑](#endnote-ref-31)
31. For further information, refer to <http://www.uev.de/> [↑](#endnote-ref-32)
32. For further information, refer to http://www.veoliaenvironmentalservices.co.uk/ [↑](#endnote-ref-33)
33. For further information, refer to http://www.noah.no/ [↑](#endnote-ref-34)
34. For further information, refer to http://www.batrec.ch/de-ch/ [↑](#endnote-ref-35)
35. For further information, refer to http://www.augeanplc.com/rws/ [↑](#endnote-ref-36)
36. Organisation for Economic Co-operation and Development (OECD). 2007. Guidance Manual on Environmentally Sound Management of Waste. Available at http://www.oecd.org/env/waste/39559085.pdf [↑](#endnote-ref-37)
37. German Ordinance on Specialised Waste Management Companies (Entsorgungsfachbetriebeverordnung - EfbV), of September 1996. Available at http://www.bmub.bund.de/fileadmin/bmu-import/files/pdfs/allgemein/application/pdf/wastemanage.pdf [↑](#endnote-ref-38)
38. Secretariat of the Basel Convention. 2013. Follow-up to the Indonesian-Swiss country-led initiative to improve the effectiveness of the Basel Convention: Framework for the environmentally sound management of hazardous wastes and other wastes. UNEP/CHW.11/3/Add.1/Rev.1. Available at http://www.basel.int/Default.aspx?tabid=3077 [↑](#endnote-ref-39)
39. For further information, refer to http://www.basel.int/Countries/ImportExportRestrictions/tabid/1481/Default.aspx [↑](#endnote-ref-40)